

What is claimed is:

1. A method for data connectivity in a room with a robotic device, said method comprising:

detecting at least one condition with a plurality of sensors;

5 communicating the detected at least one condition from the sensors to associated access points;

selecting one or more access points;

maneuvering the robotic device to a location in a vicinity of one or more of the selected access points;

10 communicating the detected at least one condition from one or more of the selected access points to the robotic device;

maneuvering the robotic device to a location in a vicinity of a base station; and

communicating the detected at least one condition from the robotic device to the base station.

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2. The method according to claim 1, further comprising:

dividing a room into zones containing sensors; and

associating the access points with the sensors of the particular zones.

20 3. The method according to claim 1, further comprising:

activating a beacon in response to receipt of the detected at least one condition from the sensors;

detecting the activated beacon; and

25 wherein the step of selecting one or more access points comprises selecting the access point associated with the activated beacon.

4. The method according to claim 3, wherein the step of detecting the activated beacon comprises detecting the activated beacon with a camera mounted in the room, said method further comprising:

30 communicating a location of the activated beacon to the robotic device.

5. The method according to claim 3, wherein the robotic device comprises a camera and wherein the step of detecting the activated beacon comprises detecting the activated beacon with the camera of the robotic device.

6. The method according to claim 1, wherein the step of selecting one or more access points comprises selecting a plurality of access points, said method further comprising:

maneuvering the robotic device to the vicinities of selected ones of the plurality of access points; and

communicating the detected at least one condition from the plurality of access points to the robotic device prior to the step of maneuvering the robotic device to a location in a vicinity of the base station.

7. The method according to claim 6, wherein the vicinities of the plurality of access points comprise download locations, said method further comprising:

devising a route for the robotic device to follow in visiting the download locations of the selected ones of the plurality of access points.

8. The method according to claim 7, wherein the step of devising a route for the robotic device comprises devising a route for the robotic device at the base station, said method further comprising:

communicating the devised route for the robotic device from the base station to the robotic device.

9. The method according to claim 7, wherein the step of devising a route for the robotic device comprises devising at least one of a route and a timing scheme based upon a routing algorithm.

10. The method according to claim 9, wherein the step of devising a route based upon a routing algorithm comprises devising a route based upon a routing algorithm that enables the robotic device to visit the download locations of the plurality of access points within a minimal amount of time.

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11. The method according to claim 9, further comprising:  
categorizing the plurality of access points into a plurality of groups; and  
wherein the step of devising a route based upon a routing algorithm comprises devising a route based upon the categorization of the plurality of access points.

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12. The method according to claim 11, wherein the step of categorizing the plurality of access points into a plurality of groups comprises categorizing the plurality of access points according to historical data pertaining to the at least one condition in associated areas of the plurality of access points.

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13. The method according to claim 9, further comprising:  
deploying a plurality of robotic devices and a plurality of CRAC units; and  
wherein the step of devising at least one of a route and a timing scheme based upon a routing algorithm comprises devising at least one of a route and a timing scheme based upon one or more of the number of robotic devices deployed and response times of the plurality of CRAC units.

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14. The method according to claim 9, wherein the step of devising at least one of a route and a timing scheme based upon a routing algorithm comprises devising at least one of a route and a timing scheme based upon availability and efficiency studies of cooling system components and components housed in the room.

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15. The method according to claim 9, wherein the step of devising at least one of a route and a timing scheme based upon a routing algorithm comprises devising at least one of a route and a timing scheme based upon substantially based on one or more of the reliabilities of components and service level agreements.

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16. The method according to claim 9, further comprising:  
implementing a computational fluid dynamics tool to determine potential problem areas in the room; and  
wherein the step of devising a route based upon a routing algorithm comprises devising a route based upon an output of the computational fluid dynamics tool.

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17. The method according to claim 1, wherein the at least one condition comprises an environmental condition, said method further comprising:

manipulating at least one cooling system component in response to the detected at least one environmental condition communicated from the robotic device.

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18. The method according to claim 1, wherein the step of detecting at least one condition comprises tracking one or more components in the room, said method further comprising:

creating or updating an inventory of components in response to the detected at least one condition communicated from the robotic device.

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19. The method according to claim 1, further comprising:  
charging a battery of the robotic device at the base station in response to a determination that the battery of the robotic device requires charging.

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20. A system for data connectivity in a room with a robotic device, said system comprising:

a plurality of sensors positioned in various locations in the room, said sensors being configured to detect at least one condition;

5 a plurality of access points associated with one or more of the sensors located in respective vicinities of the plurality of access points, said plurality of access points being configured to receive the detected at least one condition from the associated one or more sensors;

a robotic device configured to traverse the room and to receive the detected at least one condition from the plurality of access points when the robotic device is in the respective vicinities  
10 of the plurality of access points; and

a base station configured to communicate with the robotic device when the robotic device is in a vicinity of the base station.

21. The system according to claim 20, wherein the robotic device is configured to  
15 communicate with a respective one of the plurality of access points when the robotic device is within a predetermined distance to the respective one of the plurality of access points.

22. The system according to claim 21, wherein the predetermined distance comprises a range of between approximately 1-4 feet.

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23. The system according to claim 21, further comprising:

a plurality of electronic components positioned at various locations of the room; and

wherein said plurality of sensors are further configured to detect the at least one condition in areas around respective ones of the plurality of electronic components.

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24. The system according to claim 23, wherein the plurality of electronic components are housed in one or more racks, and wherein the sensors are configured to detect the at least one condition in areas around respective ones of the one or more racks.

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25. The system according to claim 20, further comprising:

a beacon associated with respective ones of the plurality of access points, wherein said plurality of access points are configured to activate a respective beacon in response to receipt of the at least one condition detected by associated sensors.

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26. The system according to claim 25, further comprising:

one or more cameras mounted at various locations of the room, the one or more cameras being configured to detect activation of the beacons, wherein the one or more cameras are configured to communicate detection of the activated beacons to the robotic device, and wherein  
10 the robotic device is configured to travel to a location in the vicinity of the access point that activated the beacon.

27. The system according to claim 25, wherein the robotic device comprises a camera configured to detect activation of the beacons, and wherein the robotic device is configured to

15 travel to a location in the vicinity of the access point that activated the beacon.

28. The system according to claim 20, wherein the plurality of sensors comprise RFID devices configured to transmit information to distances within approximately 1-4 feet.

20 29. The system according to claim 20, wherein the base station is configured to devise a route for the robotic device to follow in visiting the respective locations in the vicinities of the plurality of access points, and wherein the base station is configured to communicate the devised route to the robotic device.

25 30. The system according to claim 20, wherein the robotic device is configured to devise a route for the robotic device to follow in visiting the respective locations in the vicinities of the plurality of access points.

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31. The system according to claim 20, further comprising:

cooling system components; and

wherein the base station is configured to manipulate the cooling system components based upon the at least one detected condition communicated from the robotic device.

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32. The system according to claim 20, wherein the base station is configured to create or update an inventory of components housed in the room based upon the at least one detected condition communicated from the robotic device.

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33. The system according to claim 20, wherein the base station further comprises a recharging station for charging a battery of the robotic device.

34. A system for data connectivity in a room, said system comprising:

means for detecting at least one condition;

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means for communicating the detected at least one condition to associated access points;

means for selecting one or more access points;

means for collecting information, the means for collecting information comprising means for maneuvering the means for collecting information to a location in a vicinity of one or more of the selected access points;

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means for communicating the detected at least one condition from one or more of the selected access points to the means for collecting information;

the means for collecting information further comprising means for maneuvering the means for collecting information to a location in a vicinity of a means for controlling the room; and

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means for communicating the detected at least one condition from the means for collecting information to the means for controlling the room.

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35. The system according to claim 34, further comprising:  
means for indicating receipt of the detected at least one condition;  
means for detecting the means for indicating; and  
means for selecting the access point associated with the means for indicating.

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36. The system according to claim 34, wherein the means for communicating the detected at least one condition from one or more of the selected access points to the means for collecting information further comprises means for communicating the detected at least one condition when the means for collecting information is in a vicinity of the one or more of the selected access points.

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37. The system according to claim 34, wherein the means for communicating the detected at least one condition from the means for collecting information to the means for controlling the room further comprises means for communicating the detected at least one condition when the means for collecting information is in a vicinity of the means for controlling the room.

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38. The system according to claim 34, further comprising:  
means for devising a route for the means for collecting information, said means for devising including a routing algorithm.

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39. The system according to claim 38, wherein the means for controlling the room comprises the means for devising a route, the system further comprising:  
means for communicating a route devised by the means for devising to the means for collecting information.

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40. The system according to claim 34, further comprising:  
means for manipulating at least one cooling system component in response to detected at least one condition communicated from the means for collecting information.

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41. The system according to claim 34, further comprising:  
means for creating or updating an inventory of components in response to the detected at  
least one condition communicated from the means for collecting information.

5 42. The system according to claim 34, further comprising:  
means for charging a battery of the means for collecting information.

43. A computer readable storage medium on which is embedded one or more  
computer programs, said one or more computer programs implementing a method for data  
10 connectivity in a room with a robotic device, said one or more computer programs comprising a  
set of instructions for:  
detecting at least one condition with a plurality of sensors;  
communicating the detected at least one condition from the sensors to associated access  
points;  
15 selecting one or more access points;  
maneuvering the robotic device to a location in a vicinity of one or more of the selected  
access points;  
communicating the detected at least one condition from one or more of the selected access  
points to the robotic device;  
20 maneuvering the robotic device to a location in a vicinity of a base station; and  
communicating the detected at least one condition from the robotic device to the base  
station.

44. The computer readable storage medium according to claim 43, said one or more  
25 computer programs further comprising a set of instructions for:  
activating a beacon in response to receipt of the detected at least one condition from the  
sensors;  
detecting the activated beacon; and  
wherein the step of selecting one or more access points comprises selecting the access  
30 point associated with the activated beacon.

45. The computer readable storage medium according to claim 43, said one or more computer programs further comprising a set of instructions for:

selecting a plurality of access points;

maneuvering the robotic device to the vicinities of selected ones of the plurality of access points; and

communicating the detected at least one condition from the selected ones of the plurality of access points to the robotic device prior to the step of maneuvering the robotic device to the location in a vicinity of the base station.

46. The computer readable storage medium according to claim 45, said one or more computer programs further comprising a set of instructions for:

devising a route for the robotic device to follow in visiting download locations of the selected ones of the plurality of access points.

47. The computer readable storage medium according to claim 46, said one or more computer programs further comprising a set of instructions for:

categorizing the plurality of access points into a plurality of groups; and

devising a route based upon the categorization of the plurality of access points.

48. The computer readable storage medium according to claim 46, said one or more computer programs further comprising a set of instructions for:

implementing a computational fluid dynamics tool to determine potential problem areas in the room; and

devising a route based upon an output of the computational fluid dynamics tool.

49. The computer readable storage medium according to claim 43, said one or more computer programs further comprising a set of instructions for:

manipulating at least one cooling system component in response to the detected at least one condition communicated from the robotic device.

50. The computer readable storage medium according to claim 43, said one or more computer programs further comprising a set of instructions for:

creating or updating an inventory of components in response to the detected at least one condition communicated from the robotic device.

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